Illinois Renewable Portfolio Standard

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Illinois Sustainable Energy Plan

Per Gov. Blagojevich's 2005 State of the State Proposal

Key Components Include:

- Energy Efficiency Portfolio Standard
- Renewable Portfolio Standard
- Competitive procurement
- Cost recovery
- Independent program evaluation
- Illinois Sustainable Energy Advisory Council

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Illinois Sustainable Energy Plan

Per Gov. Blagojevich's 2005 State of the State Proposal

Goals:

- Reduce total energy costs for consumers
- Reduce the cost of doing business in Illinois by reducing total energy costs for businesses
- Capture economic development benefits of renewable energy and energy efficiency development
- Increase in-state self-reliance for energy
- Improve environmental quality in Illinois

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Illinois Sustainable Energy Plan

Renewable Portfolio Standard

- Percent of energy sold to customers to be generated from renewable sources:

2% by 2007	3% by 2008
4% by 2009	5% by 2010
6% by 2011	7% by 2012
8% by 2013	10% by 2015*

*Governor's recent Energy Independence Initiative

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Renewable Portfolio Standard

- Eligible energy resources – wind, solar thermal, photovoltaic, dedicated crops/biomass, existing hydropower, landfill methane
- >75% from wind
- Generated in Illinois or adjacent serious or severe air quality non-attainment area
- ICC & DCEO Study interstate renewable energy trading
- Penalty for non-compliance of $25/MWh (paid into Renewable Energy Trust Fund), unless compelling demonstration that due to circumstances beyond control
- Biennial reports on progress toward standards (ICC), economic impact (DCEO), and environmental impact (IEPA)

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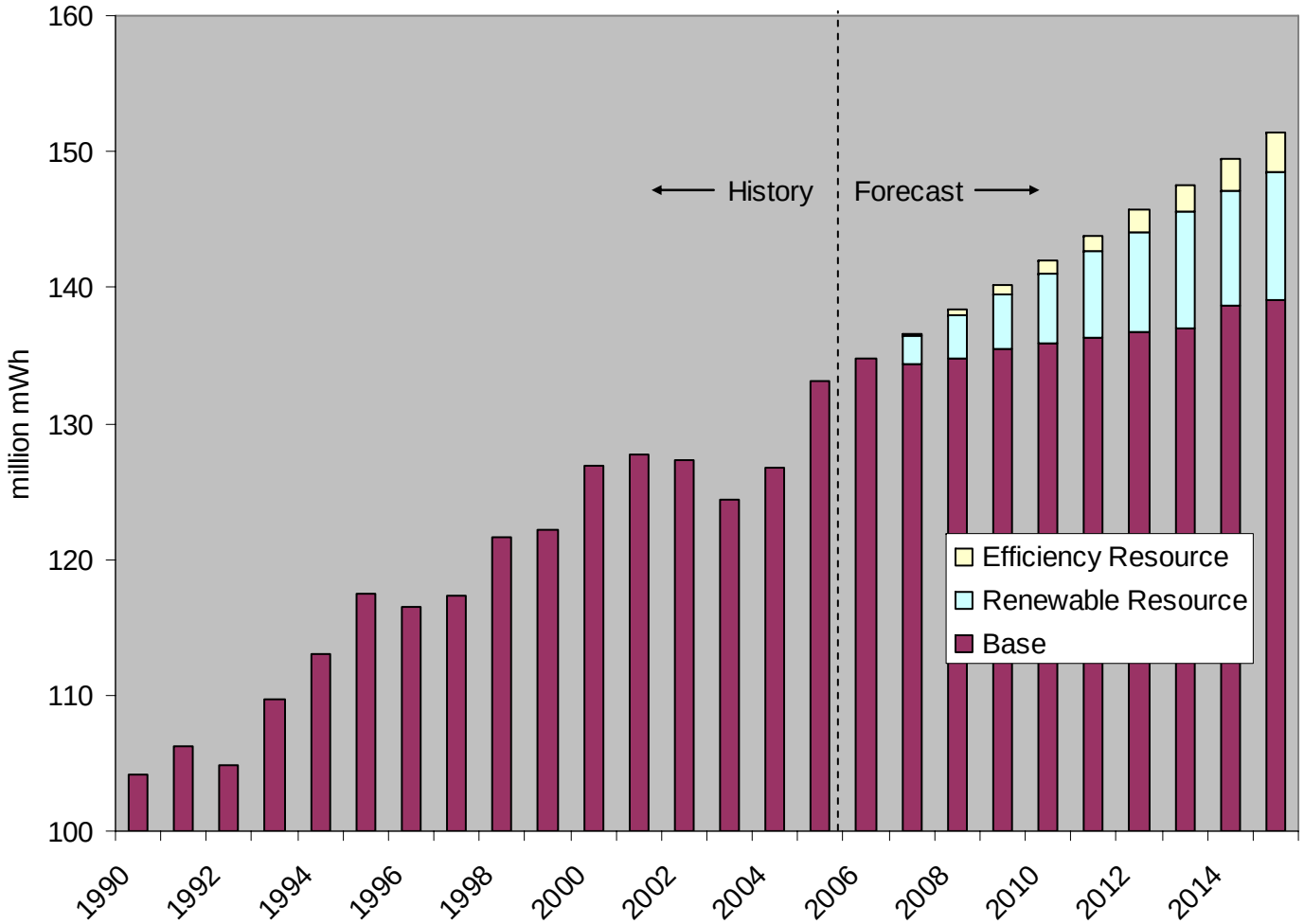
Baseline vs. RPS & EEPS



Source: Historical data from ICC, *Comparison of Electric Sales*; forecast from ERC-UIC, *The Economic Environmental Impacts of Clean Energy Development in Illinois*, June 2005 based in on EIA data and forecasts.

Hedge Value of Renewable Energy

- Electric rates are expected to increase by 25-55% based on recent auction
- Fossil fuel prices are high, volatile, and unpredictable
- Wind and other renewable resources are not dependent on fuel prices
- Diversification with renewable energy can help hedge price risk
- Long-term contracts for renewable energy can provide greater price stability
- Renewable energy may put downward pressure on natural gas and other fossil fuel prices

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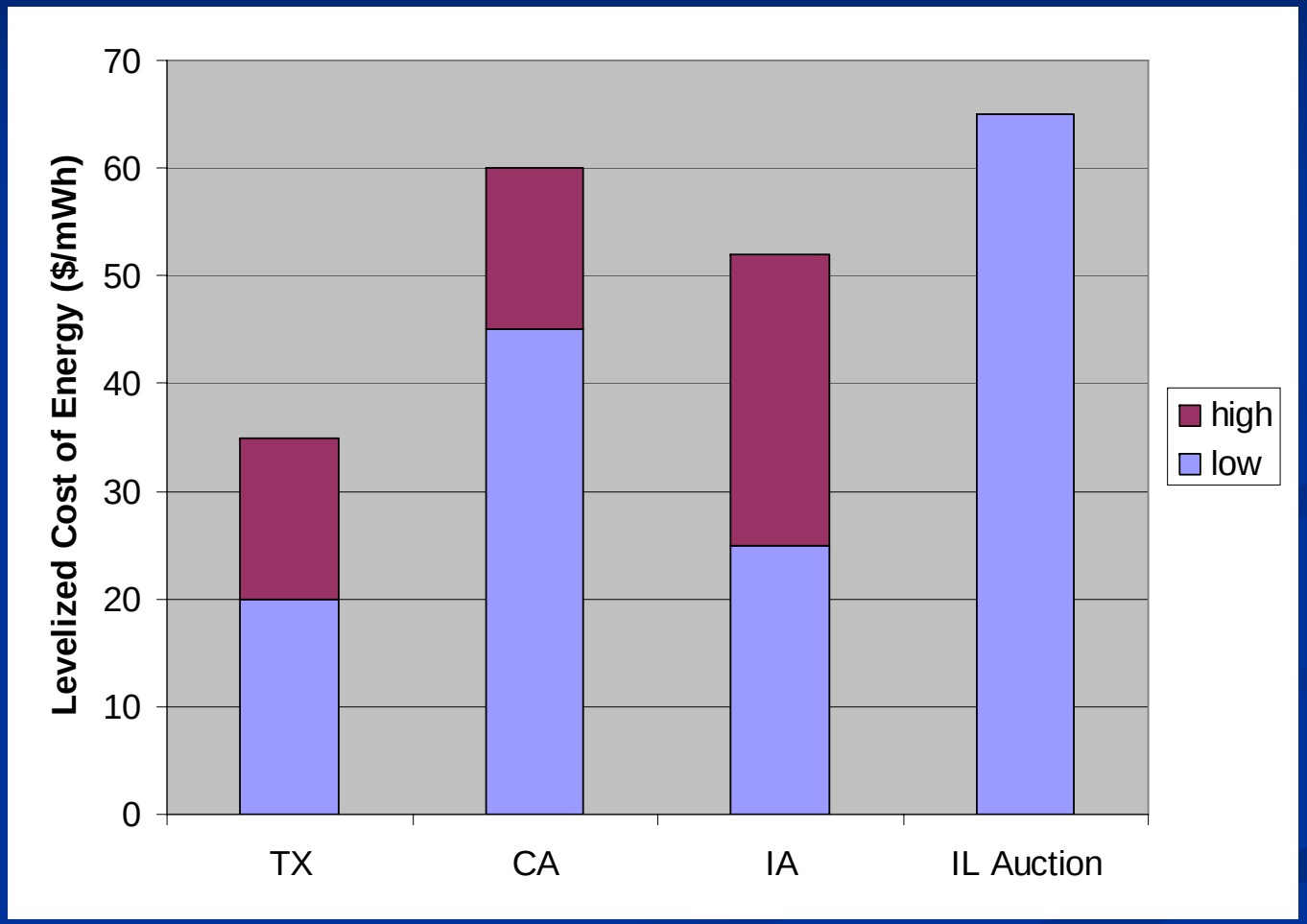
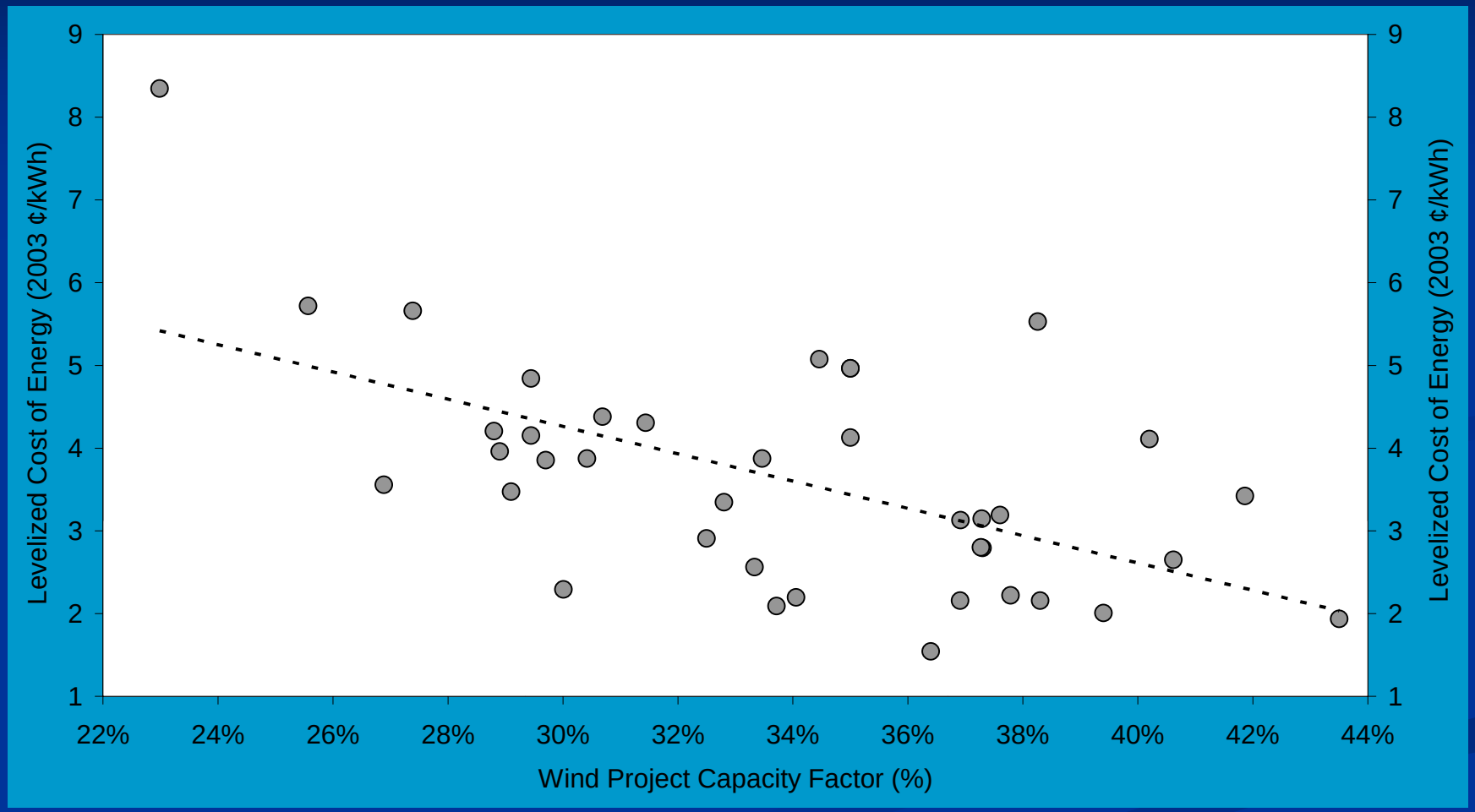
Comparison of Wind Power Contracts and Illinois Auction Prices



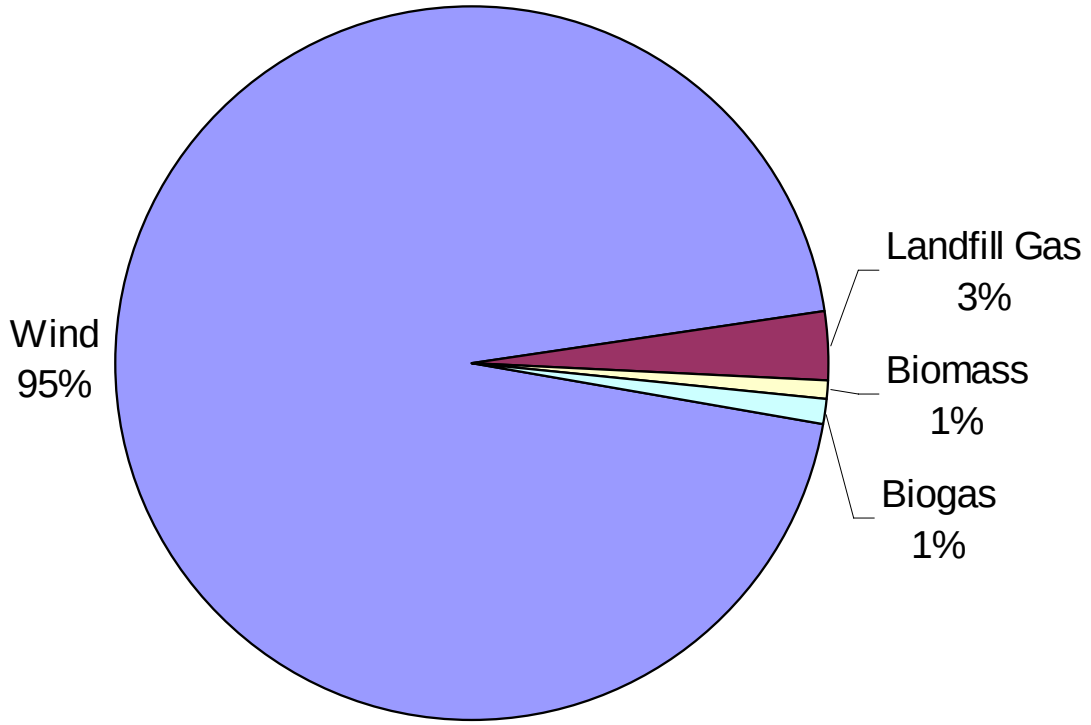
Source: Ryan Wiser and Mark Bolinger, Lawrence Berkeley National Laboratory, April 2005

Wind Capacity Factor vs. Levelized Cost



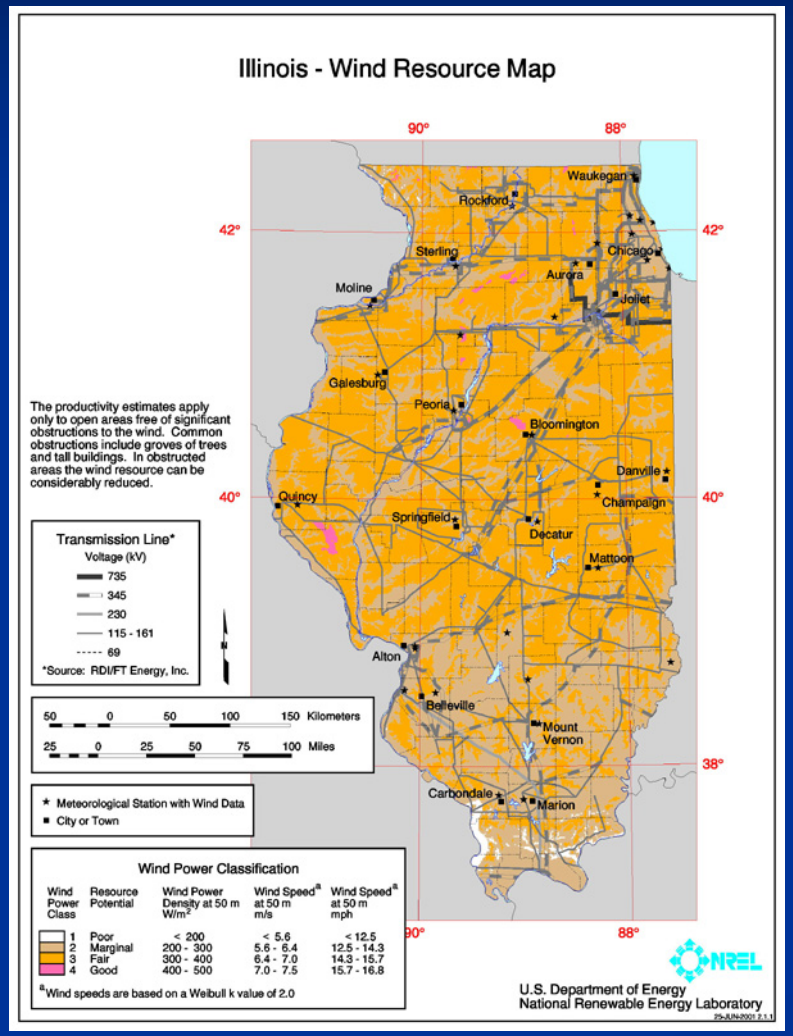
Source: Ryan Wiser and Mark Bolinger, Lawrence Berkeley National Laboratory, April 2005

Renewable Generation under RPS

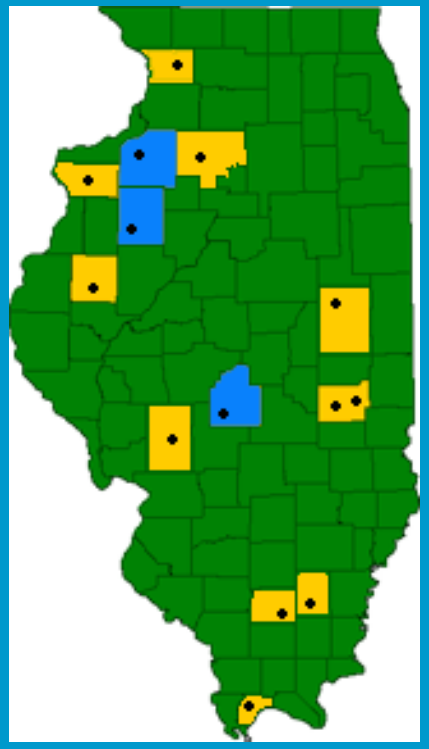


Scenario from draft report, "Emissions Impact Assessment for the Sustainable Energy Plan Based on Economic Dispatch Considerations", Illinois Energy Resources Center, Feb. 2006

Adequate Wind Capacity

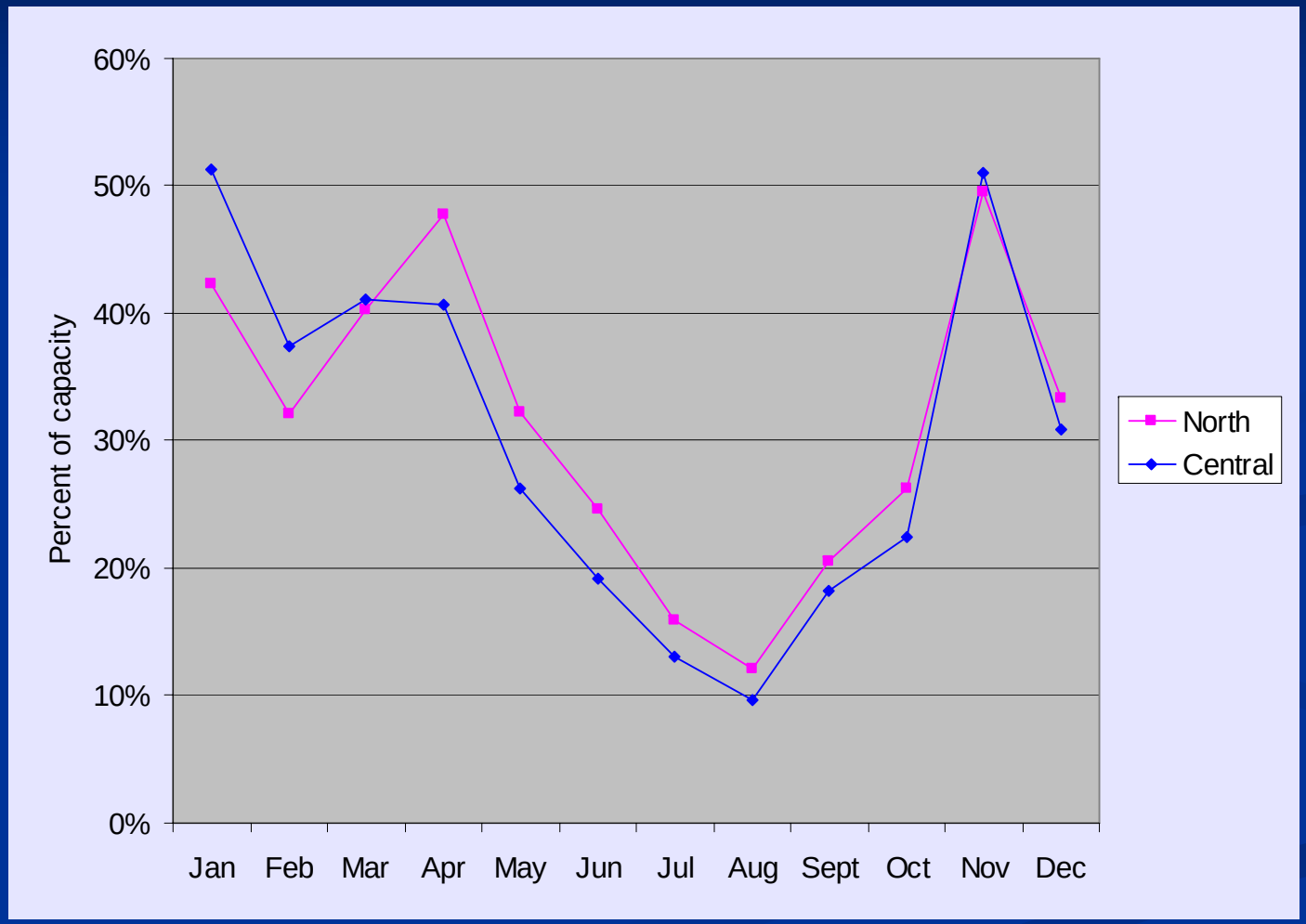


Wind Monitoring Sites



Illinois Institute for Rural Affairs, Western Illinois University.
Funding from Illinois Clean Energy Community Foundation

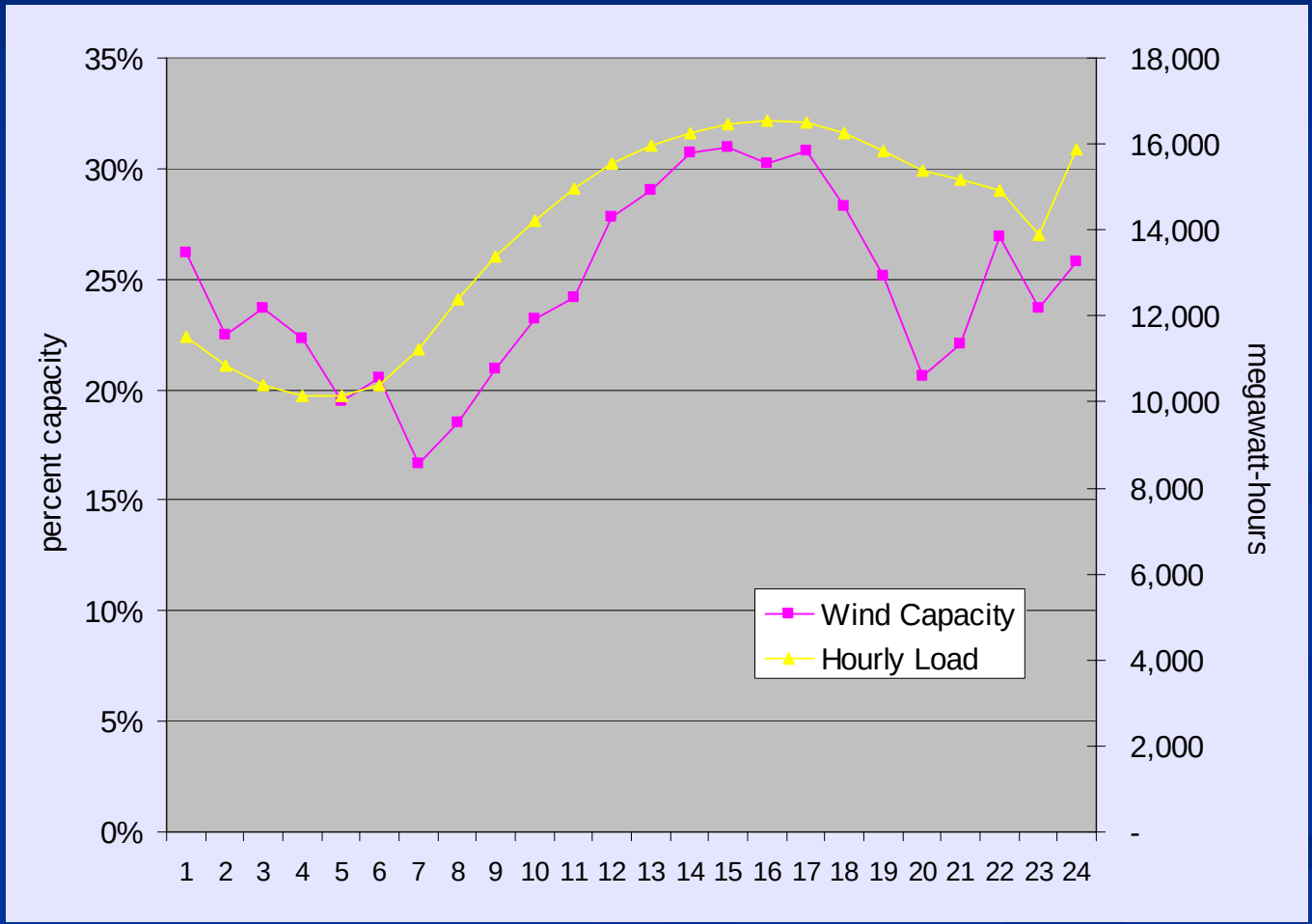
Average Monthly Wind Generation



Sources: Illinois Institute for Rural Affairs, Western Illinois University, data from wind monitoring stations, June 2005-May 2006.

Wind Availability vs. Electric Load

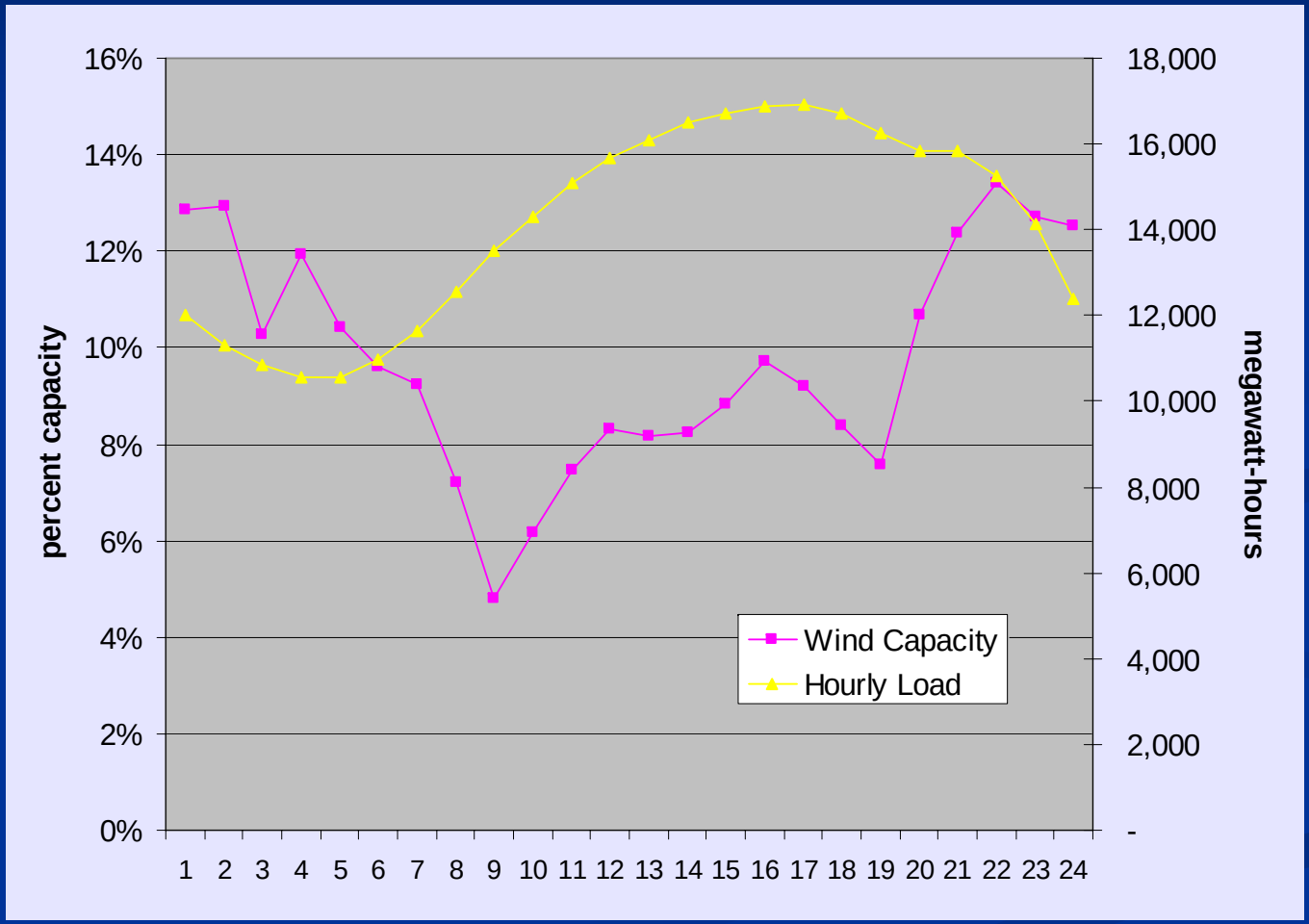
June



Sources: PJM Hourly Load Data for Commonwealth Edison, August 2005. Illinois Institute for Rural Affairs, Western Illinois University, wind data from northern Illinois monitoring stations, August 2006.

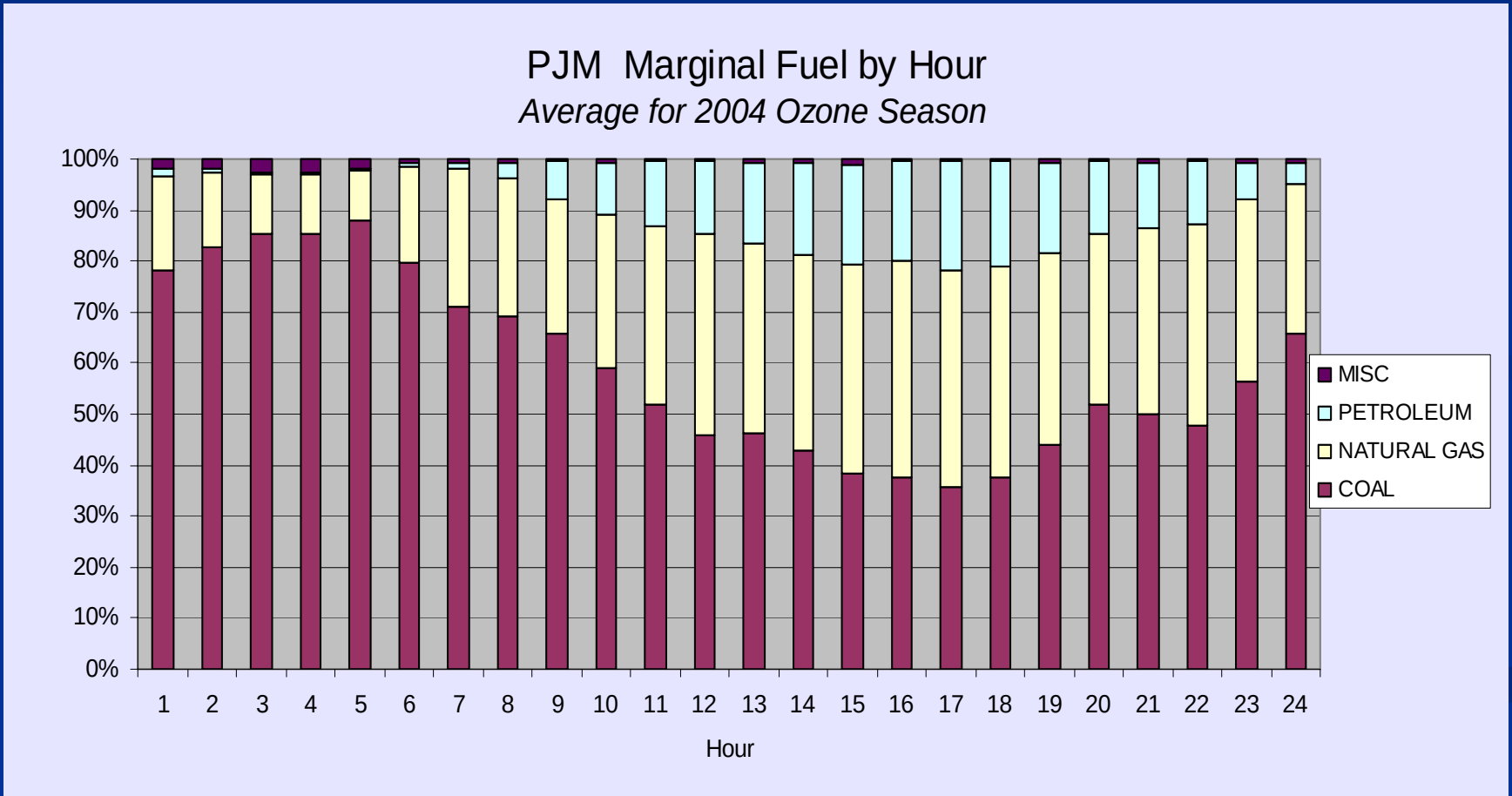
Wind Availability vs. Electric Load

August



Sources: PJM Hourly Load Data for Commonwealth Edison, August 2005. Illinois Institute for Rural Affairs, Western Illinois University, wind data from northern Illinois monitoring stations, June 2005-May 2006.

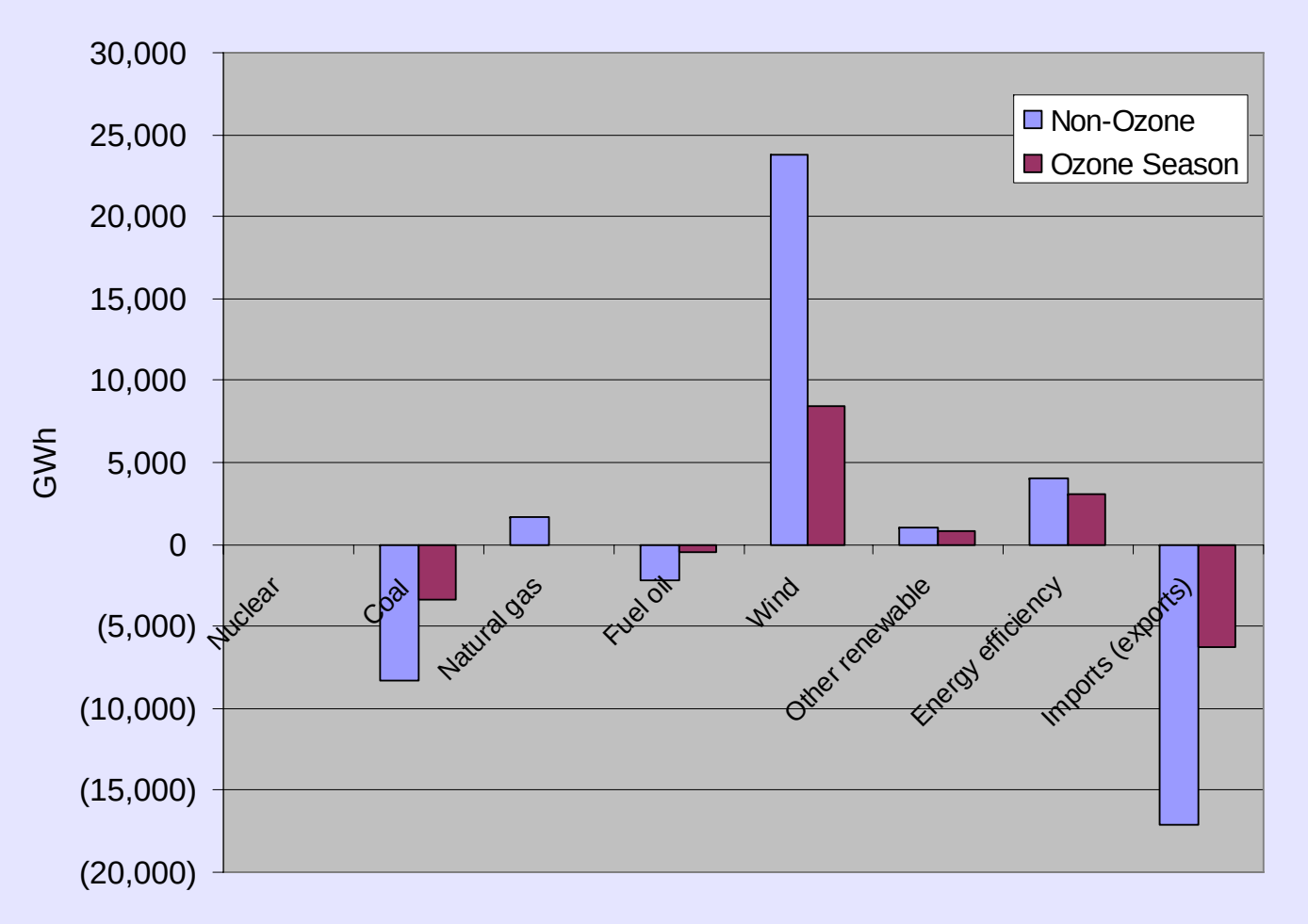
Fuel Displaced Depends on Load Shape and Availability of Resource



PJM, "Marginal Fuel Type Data", 2004, from PJM website

Intersection of Two Major RTOs

Preliminary Results: Change in Illinois Generation, 2007-2013



Source: PowerWorld Corporation, Draft Report, "Emissions Impact Assessment for the Illinois Sustainable Energy Plan Based on Transmission System Security Constrained Optimal Power Flow Considerations, September 2006

Preliminary Results: Environmental Benefits

- Illinois Sustainable Energy Plan will contribute in a modest way to ozone attainment both in Illinois and across the eastern US.
- The reductions in NOx are greater in the non-ozone season, but the Illinois RPS/EEPS brings some ozone season benefits.
- Less than half of NOx reductions occur in Illinois, the rest in other states, since Illinois generators as low-cost producers increase electricity exports.
- More than half of the generation displaced out-of-state is up wind of Illinois, thus also contributing toward ozone attainment in the state.
- Coal, which has the highest NOx emission rate, is the primary fuel displaced, along with some oil and natural gas (out-of-state).
- Natural gas consumption increases slightly in-state to deal with transmission congestion and short-term changes in availability of wind, but the environmental consequences are minimal.

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Preliminary Results: Economic Benefits of RPS

- Direct impact:
  - 1,800 jobs
  - $527.4 million economic output
- Indirect impact:
  - 6,040 jobs
  - $615.3 million economic output

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DCEO Market Development Programs
Renewable Energy Trust Fund

- Solar Energy Rebate Program
- Solar Thermal Grant Program
- Wind Energy Production Development Grants
- Large Wind System RFP*
- Renewable Energy Resource Program Grants*

*No longer active

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DCEO Funded Renewable Capacity

System Type	Installed kW	No. of Projects
Wind	305,242*	12
PV	1,374	76
Small PV	146	125
Landfill gas	3,360	2
Biogas	4,030	4
Biomass	2,265	1
Fuel Cell	13	1
Hydro	4,700	1
TOTAL	321,130	223

*Some projects still under construction.